

| Set | Items  | Description  |
|-----|--------|--|
| S1  | 668    | S AU=(HUNT, A? OR HUNT A?)   |
| S2  | 1      | S ANTHONY (2N) HUNT  |
| S3  | 230340 | S HEART? ? OR CARDIO? OR CARDIA? OR ECG OR EKG OR ELECTROCARDIO? OR MYOCARDI? OR AV()NODE? ? OR PURKINJE |
| S4  | 6      | S S1 AND S3  |

; show files

[File 350] Derwent WPIX 1963-2008/UD=200901  
(c) 2009 Thomson Reuters. All rights reserved.

[File 35] Dissertation Abs Online 1861-2008/Nov  
(c) 2008 ProQuest Info&Learning. All rights reserved.

[File 65] Inside Conferences 1993-2009/Jan 06  
(c) 2009 BLDSC all rts. reserv. All rights reserved.

4/5/1 (Item 1 from file: 350)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0018501035 & & *Drawing available*

WPI Acc no: 2008-O21376/200882

XRPX Acc No: N2009-049022

Non-invasive method of measuring drug induced changes in cardiac muscle, involves obtaining simulated epicardial electrocardiogram and biophysical electrical transmission in person body surface through filter function

Patent Assignee: PSI HEARTSIGNALS GLOBAL LTD (PSIH-N)

Inventor: HUNT A C

Patent Family ( 1 patents, 121 & countries )

| Patent Number | Kind | Date     | Application Number | Kind | Date     | Update | Type |
|---------------|------|----------|--------------------|------|----------|--------|------|
| WO 2008149159 | A2   | 20081211 | WO 2008GB50418     | A    | 20080606 | 200882 | B    |

Priority Applications (no., kind, date): GB 200710963 A 20070608

Patent Details

| Patent Number                        | Kind  | Lan | Pgs | Draw | Filing | Notes |
|--------------------------------------|---|-----|-----|------|--------|-------|
| WO 2008149159                        | A2  | EN  | 39  | 5    |        |       |
| National Designated States, Original | AE AG AL AM AO AT AU AZ BA BB BG BH BR BW BY BZ CA CH CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI GB GD GE GH GM GT HN HR HU ID IL IN IS JP KE KG KM KN KP KR KZ |     |     |      |        |       |

|  |   |
|--|---|
|  | LA LC LK LR LS LT LU LY MA MD ME MG MK MN MW MX MY<br>MZ NA NG NI NO NZ OM PG PH PL PT RO RS RU SC SD SE SG<br>SK SL SM SV SY TJ TM TN TR TT TZ UA UG US UZ VC VN ZA<br>ZM ZW |
| Regional Designated<br>States,Original | AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR<br>HR HU IE IS IT KE LS LT LU LV MC MT MW MZ NA NL NO OA<br>PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW                   |

#### Alerting Abstract WO A2

NOVELTY - The method involves obtaining a filter function using mathematical convolution of an electrocardiogram (ECG) to represent biophysical electrical transmission characteristic in a person body surface. The filter function is applied on mathematical convolution of an ECG recorded on the body surface of a person who is administered with a test drug so as to obtain ECG representing myocardial wedge simulated epicardial ECG. The drug induced changes in the cardiac muscle based on the epicardial ECG and electrical transmission.

DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

1. apparatus for obtaining ECG;
2. method of generating lumped action potential of person from epicardial ECG; and
3. apparatus for non-invasive measurement of drug induced changes.

USE - Non-invasive method of measuring drug induced changes in cardiac muscle.

ADVANTAGE - The drug induced changes in the cardiac muscle can be measured efficiently.

DESCRIPTION OF DRAWINGS - The drawing shows a flow diagram explaining the method of obtaining epicardial ECG.

Title Terms /Index Terms/Additional Words: NON; INVADE; METHOD; MEASURE; DRUG; INDUCE; CHANGE; CARDIAC; MUSCLE; OBTAIN; SIMULATE; EPICARDIUM; ECG; ELECTRIC; TRANSMISSION; PERSON; BODY; SURFACE; THROUGH; FILTER; FUNCTION

#### Class Codes

##### International Patent Classification

| IPC            | Class Level | Scope | Position | Status | Version Date |  |  |  |
|----------------|-------------|-------|----------|--------|--------------|--|--|--|
| A61B-0005/0452 | A           | I     | F        | B      | 20060101     |  |  |  |
| A61B-0005/0452 | C           | I     |          | B      | 20060101     |  |  |  |

File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-D01A1

4/5/2 (Item 2 from file: 350)

Fulltext available through: [Order File History](#)

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0015056798 & & *Drawing available*

WPI Acc no: 2005-404827/200541

XRPX Acc No: N2005-328542

Method for measuring QT interval of electrocardiogram signal, involves determining end of T wave, based on timing of intersection of upright T wave of set of electrocardiogram signal data with inverted T wave of another set of data

Patent Assignee: PSI HEARTSIGNALS LTD (PSIH-N); PSI HEARTSIGNALS GLOBAL LTD (PSIH-N)

Inventor: HUNT A; HURT A C; HUNT A C

Patent Family ( 5 patents, 105 & countries )

| Patent Number  | Kind | Date     | Application Number | Kind | Date     | Update | Type |
|----------------|------|----------|--------------------|------|----------|--------|------|
| WO 2005044102  | A1   | 20050519 | WO 2003GB4436      | A    | 20031010 | 200541 | B    |
| AU 2003269280  | A1   | 20050526 | AU 2003269280      | A    | 20031010 | 200561 | E    |
|                |      |          | WO 2003GB4436      | A    | 20031010 |        |      |
| EP 1677672     | A1   | 20060712 | EP 2003751058      | A    | 20031010 | 200648 | E    |
|                |      |          | WO 2003GB4436      | A    | 20031010 |        |      |
| US 20080262366 | A1   | 20081023 | WO 2003GB4436      | A    | 20031010 | 200872 | E    |
|                |      |          | US 2007575340      | A    | 20070621 |        |      |
| EP 1677672     | B1   | 20081126 | EP 2003751058      | A    | 20031010 | 200880 | E    |
|                |      |          | WO 2003GB4436      | A    | 20031010 |        |      |

Priority Applications (no., kind, date): WO 2003GB4436 A 20031010

Patent Details

| Patent Number                       | Kind  | Lan | Pgs | Draw | Filing Notes |
|-------------------------------------|---|-----|-----|------|--------------|
| WO 2005044102                       | A1  | EN  | 29  | 7    |              |
| National Designated States,Original | AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW |     |     |      |              |
| Regional Designated States,Original | AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW  |     |     |      |              |

|               |    |    |  |  |                     |               |
|---------------|----|----|--|--|---------------------|---------------|
| AU 2003269280 | A1 | EN |  |  | PCT Application     | WO 2003GB4436 |
|               |    |    |  |  | Based on OPI patent | WO 2005044102 |
| EP 1677672    | A1 | EN |  |  | PCT Application     | WO 2003GB4436 |
|               |    |    |  |  | Based on OPI patent | WO 2005044102 |

|                                     |  |    |  |  |                     |  |  |  |               |  |  |  |  |  |
|-------------------------------------|--|----|--|--|---------------------|--|--|--|---------------|--|--|--|--|--|
| Regional Designated States,Original | AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR |    |  |  |                     |  |  |  |               |  |  |  |  |  |
| US 20080262366                      | A1   | EN |  |  | PCT Application     |  |  |  | WO 2003GB4436 |  |  |  |  |  |
| EP 1677672                          | B1   | EN |  |  | PCT Application     |  |  |  | WO 2003GB4436 |  |  |  |  |  |
|                                     |  |    |  |  | Based on OPI patent |  |  |  | WO 2005044102 |  |  |  |  |  |
| Regional Designated States,Original | AT BE BG CH CY CZ DE DK EE ES FI FR GR HU IE IT LI LU MC NL PT RO SE SI SK TR    |    |  |  |                     |  |  |  |               |  |  |  |  |  |

Alerting Abstract WO A1

NOVELTY - The method involves determining the end of T wave, based on the timing of intersection at which an upright T wave of a set of derived electrocardiogram (ECG) signal data intersects with an inverted T wave of another set of derived ECG signal data. The derived ECG signal data sets are superimposed along an isoelectric line within the trough after the positive T wave peak.

DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

4. apparatus for measuring QT interval of electrocardiogram signal; and
5. record carrier storing QT interval measuring program.

USE - For measuring QT interval of electrocardiogram (ECG) signal.

ADVANTAGE - Enables to automatically and accurately measure the QT interval of ECG signal, using an improved technique.

DESCRIPTION OF DRAWINGS - The figure shows the upright squared ECG signal and superimposed inverted squared ECG signal.

Title Terms /Index Terms/Additional Words: METHOD; MEASURE; INTERVAL; ECG; SIGNAL; DETERMINE; END; WAVE; BASED; TIME; INTERSECT; UPRIGHT; SET; DATA; INVERT

## Class Codes

### International Patent Classification

| IPC            | Class Level | Scope | Position | Status | Version Date |  |  |  |
|----------------|-------------|-------|----------|--------|--------------|--|--|--|
| A61B-0005/0452 | A           | I     |          | R      | 20060101     |  |  |  |
| A61B-0005/0452 | A           | I     | F        | B      | 20060101     |  |  |  |
| A61B-0005/0452 | C           | I     |          | B      | 20060101     |  |  |  |
| A61B-0005/0452 | C           | I     |          | R      | 20060101     |  |  |  |
| A61B-0005/0452 | C           | I     | F        | B      | 20060101     |  |  |  |

ECLA: A61B-005/0452

US Classification, Current Main: 600-516000

US Classification, Issued: 600516

File Segment: EngPI; EPI;

DWPI Class: S05; T01; P31

Manual Codes (EPI/S-X): S05-D01A1; T01-J06A; T01-S03

4/5/3 (Item 3 from file: 350)

Fulltext available through: [Order File History](#)

Derwent WPIX

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0013684666 & & *Drawing available*

WPI Acc no: 2003-781490/200374

XRPX Acc No: N2003-626103

Electrocardiogram measurement method involves squaring and adding amplitudes measured by orthogonal leads to produce resultant waveform

Patent Assignee: HUNT A C (HUNT-I); PSI HEARTSIGNALS GLOBAL LTD (PSIH-N)

Inventor: HUNT A C

Patent Family ( 2 patents, 1 & countries )

| Patent Number | Kind | Date     | Application Number | Kind | Date     | Update | Type |
|---------------|------|----------|--------------------|------|----------|--------|------|
| GB 2387442    | A    | 20031015 | GB 20028115        | A    | 20020409 | 200374 | B    |
| GB 2387442    | B    | 20061018 |                    |      |          | 200668 | E    |

Priority Applications (no., kind, date): GB 20028115 A 20020409

Patent Details

| Patent Number | Kind | Lan | Pgs | Draw | Filing Notes |
|---------------|------|-----|-----|------|--------------|
| GB 2387442    | A    | EN  | 12  | 3    |              |

Alerting Abstract GB A

NOVELTY - The amplitude of the electrical heart-activity measured by the orthogonal leads, are squared. The squared values are added and a resultant waveform having a longest QT interval is produced. The resultant waveform is inverted to create a reflected waveform. The intersection of the resultant and reflected waveforms along the isoelectric baseline, within the following trough defines the end of T-wave.

USE - For measuring the QT interval in electrocardiogram (ECG ).

ADVANTAGE - Since small values are smoothed by squaring, identification of the trough is more accurate hence, QT interval measurement is accurate.

DESCRIPTION OF DRAWINGS - The figures show the graph of the electrocardiograms.

Title Terms /Index Terms/Additional Words: ECG; MEASURE; METHOD; SQUARE; ADD; AMPLITUDE; ORTHOGONAL; LEAD; PRODUCE; RESULT; WAVEFORM

## Class Codes

### International Patent Classification

| IPC            | Class Level | Scope | Position | Status | Version Date |  |  |  |
|----------------|-------------|-------|----------|--------|--------------|--|--|--|
| A61B-0005/04   | A           | I     | F        | B      | 20060101     |  |  |  |
| A61B-0005/0452 | A           | I     | L        | B      | 20060101     |  |  |  |
| A61B-0005/0452 | A           | I     |          | R      | 20060101     |  |  |  |
| G06F-0017/00   | A           | I     | L        | B      | 20060101     |  |  |  |
| A61B-0005/04   | C           | I     | F        | B      | 20060101     |  |  |  |
| A61B-0005/0452 | C           | I     | L        | B      | 20060101     |  |  |  |
| A61B-0005/0452 | C           | I     |          | R      | 20060101     |  |  |  |
| G06F-0017/00   | C           | I     | L        | B      | 20060101     |  |  |  |

ECLA: A61B-005/0452

File Segment: EngPI; EPI;

DWPI Class: S05; P31

Manual Codes (EPI/S-X): S05-D01A1

4/5/4 (Item 1 from file: 65)

Inside Conferences

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03610928 Inside Conference Item ID: CN038042518

Atrial Systolic Function in Left Heart Failure

Hunt, A. C.; Denslow, C.; Carson, K.; Kilbey, R.; Murray, S.; Burrows, M.

Conference: Computers in cardiology - Conference; 27th

COMPUTERS IN CARDIOLOGY , 2000 P: 575-578

IEEE, 2000

ISSN: 0276-6547 ISBN: 0780365585; 0780365577; 0780365593

Language: English Document Type: Conference Papers

Editor: Murray, A.

Sponsor: Institute of Electrical and Electronics Engineers

Location: Cambridge, MA

2000; Sep ( 200009 ) ( 200009 )

British Library Item Location: 3394.895000

Descriptors: cardiology; computers; IEEE

4/5/5 (Item 2 from file: 65)

Inside Conferences

(c) 2009 BLDSC all rts. reserv. All rights reserved.  
03610886 Inside Conference Item ID: CN038042099  
Fractal Structure of Alternate T Waves by Wavelet Analysis  
Hunt, A. C.  
Conference: Computers in cardiology - Conference; 27th  
COMPUTERS IN CARDIOLOGY , 2000 P: 415-418  
IEEE, 2000  
ISSN: 0276-6547 ISBN: 0780365585; 0780365577; 0780365593  
Language: English Document Type: Conference Papers  
Editor: Murray, A.  
Sponsor: Institute of Electrical and Electronics Engineers  
Location: Cambridge, MA  
2000; Sep ( 200009 ) ( 200009 )  
British Library Item Location: 3394.895000  
Descriptors: cardiology; computers; IEEE

4/5/6 (Item 3 from file: 65)  
Inside Conferences  
(c) 2009 BLDSC all rts. reserv. All rights reserved.  
03610838 Inside Conference Item ID: CN038041617  
Computational Method to Model Flow through the Mitral Valve and Early Diastolic Filling of the Left Ventricle  
Hunt, A. C.  
Conference: Computers in cardiology - Conference; 27th  
COMPUTERS IN CARDIOLOGY , 2000 P: 223-226  
IEEE, 2000  
ISSN: 0276-6547 ISBN: 0780365585; 0780365577; 0780365593  
Language: English Document Type: Conference Papers  
Editor: Murray, A.  
Sponsor: Institute of Electrical and Electronics Engineers  
Location: Cambridge, MA  
2000; Sep ( 200009 ) ( 200009 )  
British Library Item Location: 3394.895000  
Descriptors: cardiology; computers; IEEE